

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:
 - means for inputting data described in a color page description language;
 - 5 means for analyzing at least luminance information from the data input to said input means;
 - means for receiving the luminance information analyzed by said analysis means, converting the luminance information into density information, and
 - 10 outputting the density information;
 - means for determining if the density information is offset to a specific color;
 - means for, when it is determined that the density information is offset to a specific color, gradating the
 - 15 specific color; and
 - means for, when the density information is offset to the specific color, reducing a gradation level of colors other than the specific color.
2. The apparatus according to claim 1, wherein the
- 20 luminance information is color information of red (R), green (G), and blue (B) components, and the density information is color information of yellow (Y), magenta (M), cyan (C), and black (K) components, and
- when said converting means converts the luminance
- 25 information into density information in which one of yellow (Y), magenta (M), cyan (C), and black (K) is stronger than the remaining three colors, and the

remaining colors are converted into density information of "0" or a level close to "0", said determining means determines that the density information is offset to a specific color.

- 5 3. The apparatus according to claim 1, further comprising:

 means for printing out the density information.

4. The apparatus according to claim 3, wherein said printing means comprises means for generating latent
10 image, and

 said reducing means executes the tone output level reduction process for making the generating means generate a latent image with a light amount of invisible level or with a light amount not more than a
15 non-developing level of said printing means.

5. The apparatus according to claim 4, wherein said generating means generates a latent image using dots of uniform and lowest level (nonzero) in correspondence with colors reduced the gradation level.

- 20 6. The apparatus according to claim 3, further comprising:

 means for determining an object contained in the data, and

 wherein said reducing means reduces the gradation
25 level on the basis of the determination result of said determining means.

7. The apparatus according to claim 6, wherein said object determination means determines if the object is one of image, text, and graphics objects,

said reducing means reduces the gradation level
5 for the text and graphics objects, and

said gradating means executes a simple dither process for the image object.

8. An information processing apparatus connected to color recording means, said apparatus comprising:

10 means for generating document data to be recorded by the color recording means;

means for translating the document data into a page description language corresponding to the color recording means;

15 means for analyzing first color information from data described in the page description language; and

means for converting the first color information into second color information as a color space of the color recording means by executing a gradation level
20 reduction process of colors not more than a predetermined level with the color recording means being able to generate an image with a light amount not more than an invisible, non-developing level.

9. The apparatus according to claim 8, wherein the
25 first information includes red (R), green (G), and blue (B) components, and

the second color information includes yellow (Y), magenta (M), cyan (C), and black (K) components.

10. The apparatus according to claim 8, further comprising:

5 means for determining if an object contained in the data is one of image, text, and graphics objects, and

wherein said reducing means executes the gradation level reduction process on the basis of a determination
10 result of said determining means.

11. The apparatus according to claim 10, wherein said converting means executes the gradation level reduction process for the text and graphics objects, and executes a simple dither process for the image object.

15 12. An image processing method comprising the step of: inputting data described in a color page description language;

analyzing at least luminance information from the data input to the input step;

20 converting the luminance information analyzed in the analysis step into density information;

determining if the density information is offset to a specific color;

gradating the specific color when it is determined
25 that the density information is offset to a specific color; and

reducing a gradation level of colors other than the specific color when the density information is offset to the specific color.

13. The method according to claim 12, wherein the
5 luminance information is color information of red (R), green (G), and blue (B) components, and the density information is color information of yellow (Y), magenta (M), cyan (C), and black (K) components, and

when the luminance information is converted into
10 density information in which one of yellow (Y), magenta (M), cyan (C), and black (K) is stronger than the remaining three colors, and the remaining colors are converted into density information of "0" or a level close to "0" in the conversion step, it is determined in
15 the determination step that the density information is offset to a specific color.

14. The method according to claim 12, further comprising the step of printing out the density information.

20 15. The method according to claim 14, wherein the printing out step comprises the step of generating a latent image, and

the reducing step reduces the gradation so that the generating step generates a latent image with a
25 light amount of invisible level or with a light amount not more than a non-developing level in the printing out step.

16. The method according to claim 15, wherein the generating step generates a latent image using dots of uniform and lowest level (nonzero) in correspondence with colors which have undergone the reducing step.

5 17. The method according to claim 14, further comprising the step of determining an object contained in the data,

wherein the reducing step reduces the gradation level on the basis of the determination result in the
10 determining step.

18. The method according to claim 17, wherein the determining step determines if the object is one of image, text, and graphics objects,

the reducing step reduces the gradation level for
15 the text and graphics objects, and

the gradating step executes a simple dither process for the image object.

19. A method for information processing apparatus connected to color recording means, comprising the step
20 of:

generating document data to be recorded by the color recording means;

translating the document data into a page description language corresponding to the color
25 recording means;

analyzing first color information from data described in the page description language; and

converting the first color information into second color information as a color space of the color recording means by executing a gradation level reduction process of colors not more than a predetermined level
5 with the color recording means being able to generate an image with a light amount not more than an invisible, non-developing level.

20. The method according to claim 19, wherein the first information includes red (R), green (G), and blue
10 (B) components, and

the second color information includes yellow (Y), magenta (M), cyan (C), and black (K) components.

21. The method according to claim 19, further comprising the step of determining if an object
15 contained in the data is one of image, text, and graphics objects, and

wherein the reducing step reduces the gradation level on the basis of a determination result of the determining step.

20 22. The method according to claim 21, wherein the conversion step includes the step of executing the gradation level reduction process for the text and graphics objects, and executing a simple dither process for the image object.

25 23. A computer program product comprising a computer readable medium having computer program code, for executing an image process, said product including:

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input process procedure codes for inputting data
described in a color page description language;

analysis process procedure codes for analyzing at
least luminance information from the data input to the
5 input step;

conversion process procedure codes for converting
the analyzed luminance information into density
information;

determination process procedure codes for
10 determining if the density information is offset to a
specific color;

gradating process procedure codes for gradating
the specific color when it is determined that the
density information is offset to a specific color; and

15 gradation level reduction process procedure codes
for executing a gradation level reduction process of
colors other than the specific color when the density
information is offset to the specific color.

24. A computer program product comprising a computer
20 readable medium having computer program code, for
executing an information process, said product
including:

generation process procedure codes for generating
document data to be recorded by color recording means;

25 translation process procedure codes for
translating the document data into a page description
language corresponding to the color recording means;

analysis process procedure codes for analyzing
first color information from data described in the page
description language; and

conversion process procedure codes for converting
5 the first color information into second color
information as a color space of the color recording
means by executing a gradation level reduction process
of colors not more than a predetermined level with the
color recording means being able to generate an image
10 with a light amount not more than an invisible,
non-developing level.